REMARKS

The Office Action mailed May 9, 2003 has been carefully considered by applicant. The Examiner's careful review is noted with appreciation.

The drawing figures have been amended to overcome the Examiner's objection. More specifically, numerals 10a and 10b mentioned on page 3, lines 13 and 24 and page 4, line 8 are now properly demarcated on Figures 1A and 1B.

Claims 1 and 8 were rejected under 35 USC §102(b) as being anticipated by any one of Kilayko U.S. Patent No. 3,491,788, Neuzeret et al U.S. Patent No. 4,478,236 or Becker et al U.S. Patent No. 4,232,704. Claims 2-5 were rejected under 35 USC §102(b) as being anticipated by either Neuzeret et al '236 or Becker et al '704. Claim 6 was rejected under 35 USC §102(b) as being anticipated by Kilayko '788.

Claim 7 was objected to as being dependent upon a rejected base claim, but deemed allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to the claim rejections, applicant respectfully disagrees with the Examiner's analysis and conclusion that claims 1-6 and 8 are anticipated by the cited references. Briefly, as set forth in detail below, none of the cited references comprise a valve system which comprises means for controlling venting of the cavity dependent upon the relative values of the valve system inlet and outlet pressures, per the invention of claim 1.

Claim 1

The invention of claim 1 relates to a valve system for controlling the dispensing, in use, of a fluid. The valve system comprises first and second valve members defining a cavity therebetween. The first valve member has a closed position and an open position and provides a seal between an inlet of the valve system and the cavity while in the closed position and allows passage of fluid from the inlet to the cavity while in the open position. The second valve member has a closed position and an open position and provides a seal between the cavity and an outlet of the valve system while in the closed position and allows passage of the fluid from the cavity to the outlet while in the open position, thereby controlling the passage of fluid through the valve system. The valve

system further comprises means for controlling venting of the cavity dependent upon the relative values of the valve system inlet and outlet pressures.

The device of claim 1 represents a significant advancement over the prior art, all of which are merely capable of venting based upon the relative pressures between one of the inlet and outlet and the interconnecting chamber. With the present invention, as described on page 5, lines 16-30 of the specification, when venting occurs and the chamber pressure is reduced, the inlet valve remains closed until delivery can be resumed, at which point the inlet pressure is sufficiently increased to open the inlet and outlet valve members and to deactivate the venting process. This desirable feature effectively prevents the loss of product and possible atmospheric contamination.

In contrast, all of the prior art arrangements have configurations in which venting occurs dependent upon the relative pressures between one of the inlet and outlet and the interconnecting chamber. Such an arrangement risks loss of product and possible atmospheric contamination. This can be appreciated by examining the drawing figures in each of the prior art arrangements, where it can be seen that in all of them the respective inlet and outlet valves are not connected, except for by the connecting chamber. Thus, the inlet and outlet valve members operate independent of each other. More specifically:

Kilayko '788 teaches a valve construction (10) having a pair of openings (12, 14) and a flow channel (16) extending therebetween. A vent (22) communicates with cavities (18, 20) adjacent one of the openings. In operation, ball check valve (24) floats in liquid and seals vent (22). Ball check valve (26), responsive to pressure, seals outlet opening (14). As stated in column 2, lines 30-38, if prime is lost, and air enters flow channel (16) at cavity (18), ball (24) falls and seals opening vent (22), thereby sealing opening (12). Simultaneously, ball (26) seals outlet opening (14) and prevents liquid backflow. Thereafter, ball (24) acts as a pressure responsive check valve at opening (12) until liquid again enters through opening (12). Air is bled out through vent (22) until cavity (18) is again filled with liquid and ball (24) again seals the vent (22). Thus, Kilayko '788 merely functions based on the pressure difference between one of the openings (12, 14) and the flow channel (16). Kilayko '788 does not teach or suggest controlling venting of the cavity based on the relative values of the valve system inlet (12) and outlet (14) pressures.

Neuzeret '236 teaches a disc connecting apparatus for fitting to hydraulic circuits. A primary spring actuated valve (7) and a secondary spring actuated valve (11) are separated by an intermediate chamber (6), which opens to the exterior through a fixed discharge seat (17). The discharge seat (17) cooperates with a discharge closer (18) located at the lower end of a spring actuated movable rod (19). When the disc connecting apparatus is engaged, inflow pressure is first applied to exterior chamber (30), which forces membrane (3) to move vertically movable rod (19) to close the discharge closer (18). Thereafter, a resultant increase in pressure at the primary valve (7) opens the valve, increases the pressure in intermediate chamber (6), and then causes the secondary valve (11) to open, such that fluid flows through the connection (5). If the fluid flow ceases, primary and secondary valves (7, 11) are biased closed and the secondary valve prevents any return of overflow fluid into the intermediate chamber. If the secondary valve (11) becomes defective, outflow pressure establishes itself in the intermediate chamber until it becomes sufficient to open the discharge valve (17, 18, 21, 22). In the case of an increase in the inflow pressure, the primary and secondary valves are biased closed. The inflow pressure becomes sufficient in relation to the pressure obtained in the intermediate chamber so that the spring 26 raises the membrane 3 and opens the valves 21, 22, 17, 18. Thus, Neuzeret et al '236 merely functions based on the pressure difference between one of the valves (7, 11, 13) and the chamber (6). Neuzeret et al '236 is not capable of controlling venting of the cavity based on the relative values of the inlet (12) and outlet (14) pressures.

Becker et al '704 teaches a back flow preventing device which prevents the reverse flow of water into a supply system. The device has opposing check valves (34, 36) which open under normal water pressure to allow water to flow through an central chamber (32), and which are spring biased to a normally closed position. If one or both of the check valves malfunction, a relief valve assembly (90) prevents contamination of the water supply, while venting liquid from the chamber (32). As column 4, lines 51-60 state:

> [W]hen a downstream pressure build up occurs (assuming a malfunction of either of the check valves...) and the pressure differential between chambers (28, 30)...drops below a predetermined point, spring (120) causes relief valve assembly (90) to open. Once the relief valve opens, the water passes out drain vent (92) rather than back into the supply line thus avoiding contamination of the water supply.

Thus, Becket et al '704 merely functions based on the pressure difference between one of the inlet (28) or outlet (32) and the central chamber (30). Becker et al '704 is not capable of controlling venting of the cavity based on the relative values of the inlet (28) and outlet (32) pressures.

As clearly detailed above, all of the prior art arrangements have configurations in which venting from a central chamber occurs dependent upon the relative pressures between one of the inlet or outlet and the interconnecting chamber, and thus do not anticipate or render obvious the invention of claim 1, which recites means for controlling venting of the cavity dependent upon the relative valves of the valve system inlet and outlet pressures. Claim 1 is thus believed allowable and passage as such is earnestly requested.

Claims 2-6, 8

Claims 2-6 and 8 depend directly or indirectly from claim 1 and are thus believed allowable for the reasons stated above, as well as for the subject matter recited therein.

Claim 7

Claim 7 has been amended to independent form to include all of the limitations of the base claim and any intervening claims. Claim 7 is thus believed allowable, per the Examiner's statement of allowability. Passage as such is earnestly requested.

This application is believed in condition for allowance, with claim 1-8, and such action is earnestly requested.

Respectfully submitted,

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